

ABSTRACT OF THE DISCLOSURE

5 A data switch includes multiple switching modules interconnected over a backplane. The data switch maintains flow integrity while path transitioning. The flow integrity can be maintained by temporarily disabling one or more of the switching modules from transmitting data units over the backplane for a flow undergoing a path transition. The disable condition is imposed when the path transition is commenced, and is lifted after the path transition is completed and an interval has passed ensuring that all data units for the flow transmitted to the backplane prior to imposing the disable condition have cleared the backplane. The backplane includes a multicast fabric and a unicast fabric, wherein flow path transitions are made from the multicast fabric to the unicast fabric upon source learning. All switching modules are temporarily disabled from transmitting data units having as a destination address an address undergoing source learning to the backplane. Moreover, the switching module supporting the device whose address is undergoing source learning is temporarily disabled from transmitting data units having the address as a source address to the backplane. The disable conditions are lifted after source learning has been completed and an interval has passed ensuring that all data units having the source learned address as a source or destination address and transmitted to the multicast fabric have cleared the backplane.